

**RURAL URBAN STUDIES UNIT**



UNIVERSITY OF NATAL DURBAN

**RURAL AND URBAN POVERTY  
AND THE  
MEASUREMENT OF DEVELOPMENT  
PERFORMANCE  
IN THE TRANSKEI**

by

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### **Rural Urban Studies Unit**

The Rural Urban Studies Unit was founded in 1983 by the Human Sciences Research Council for the purpose of studying the dynamics of the links between the rural and urban areas of South Africa. It is situated at the University of Natal, Durban and works in close co-operation with the Development Studies Unit.

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"There are many statistical difficulties and philosophical puzzles in the calculation of national income even for highly organised and highly commercialised Western society; in large sectors of the third world, the information simply does not exist; tables of comparative GNP have been filled in with imaginative estimates. The main point however, is not the difficulty of estimating and comparing national incomes, but the very conception itself. What is the meaning of calculating the magnitude of a flow of physical output without regard to its conditions of production or distribution between the people concerned?" (Robinson, 1977 : 3)

## 1. INTRODUCTION.

The emergence of 'independent' and 'self governing' national states has been a key part of the National Party's attempt to provide an alternative constitutional arrangement to the incorporation of the African majority into central political and economic institutions in South Africa. To date four of the ten identified 'ethnic states' have taken 'independence', with a fifth to follow in the near future.

Evaluations of development policy in these areas have usually been coloured by the political persuasions and agendas of the commentators. Thus Benso (1976) set out to 'prove', on the basis of comparative national accounts magnitudes, that these 'states' have as much claim to 'independence' as other internationally recognised countries. Conversely, opponents of the Separate Development exercise have tended to emphasise the high levels of economic dependence of the homelands on South Africa and the political fraudulence of the policy (Southall, 1983). Both commentators appeal to economic facts to prove their positions, although the latter often correctly emphasise the political context of development as well.

Until recently, national accounts magnitudes were the only data widely available, and featured prominently in these debates. However, over the last few years, a number of additional indices have been produced, which allow for the evaluation of development performance in the Transkei - the model for the Separate Development Policy.

The paper is divided into the following sections: In Section 2 the problems of selecting an unambiguous development index are outlined. This is followed by an assessment of National Accounts data as a development index (Section 3). A number of limitations of national income data as a development indicator are noted and this leads to a consideration of distributional (Section 4) and poverty (Section 5) criteria. Finally, in Section 6 the major findings of this paper are summarised.

## **2. IS THERE AN UNAMBIGUOUS DEVELOPMENT INDEX?**

The importance of quantitative indicators for the measurement of development performance can be clearly seen in Colman and Nixon's (1978 : 3) definition of development as :

"a process of improvement with respect to a set of values, or, when comparing the relative levels of development of different countries, as a comparative state with respect to such values. The values in question relate to desired conditions in society."

Although the content ascribed to 'desirable conditions' is likely to differ between individuals and class groupings, there is increasing



agreement amongst development commentators that :

"The ultimate success or failure of development policy depends on the progress of the poor in attaining enough food, good health and longevity, satisfying and remunerative work, and the chance for personal growth through education."  
(McGreevey, 1980 : 1)

Before examining particular indicators that have been advanced to measure development, it is necessary to consider some of the problems of compilation. (Colman and Nixon, 1978 : 6). The first problem might be termed that of **quantifiability**. Many of the dimensions of 'development' such as health, security, and welfare are in essence qualitative concepts and can only be measured indirectly. Thus health might be approximated by the infant mortality rate or the incidences of certain diseases such as tuberculosis or cancer. Special care must be exercised in the choice of any indicator to ensure that it adequately captures the dimension of development under examination.

Secondly, the **multi-dimensionality** of development implies that, if a single indicator is to be chosen, it should be ideally able to summarise political, environmental, economic, cultural and sociological factors. As this is impossible in practice, a number of indices have to be utilised, and this complicates comparisons between countries, as some may score better on some indicators, and worse on others. (cf. Chenery and Syrquin, 1977).

Finally, there is the related complication of **weighting** different indices when combining them into a single summary index. These



methodological problems introduce a degree of arbitrariness into any attempt to capture 'development' in a reasonably concise fashion. Accordingly, it is necessary to keep what is being measured, and the rules and accuracy of measurement continually in mind. (McGreevey, 1980 : 12 - 19).

### 3. NATIONAL INCOME.

National income is perhaps the most popular single index of development - especially amongst proponents of accelerated growth models. Among its advantages: it measures the production of goods and services, which are a precondition of development; its rules of measurement are well known; and, as it is produced by almost all countries, international comparison is facilitated. (Colman and Hixson, 1978 : 7). It is also a useful tool for planning purposes, allowing for the design and monitoring of sectoral growth policies and improved budget planning. Additionally, in Transkei's specific circumstances, such data can assist arguments for the inter-regional transfer of fiscal resources through the Customs Union Agreement, Budget Aid, and the operations of the Southern African Development Bank. (Thomas, 1983 : 26 - 28).

By definition, national income statistics are compiled for nation states. However, this exercise takes on particular ideological connotations in the case of South Africa's internal colonies or 'national' and 'self-governing' states. Thus, until recently, the semi-governmental agency responsible for the preparation of output estimates for these regions included the earnings of 'permanently

absent citizens', whose only links with these areas existed in the minds of apartheid strategists, in Gross National Product estimates. (BENSO, 1976). Seemingly aware of these difficulties, Thomas (1983 : 25) tries to steer a middle course contending that :

"Due to the close interaction between the South African and Transkeian 'economies' (many observers would even question the legitimacy of speaking about a 'Transkeian economy') one might still regard aggregate economic data as 'regional' data. On the other hand, Transkei's independence is as much a fact as that of Lesotho, Botswana and Swaziland, with the result that ... aggregate economic data for the post-1976 period can be regarded as 'National' income accounting..".

The first part of his argument is acceptable, and rather than introduce a string of tortuous neologisms, we will interpret 'national' accounts magnitudes for the Transkei as regional data and relate them back to the national (South African) picture where possible. However, the second part of the argument, which equates Transkeian 'independence' with that of the BLS countries, is not only 'factually' contentious, but politically dangerous, and is rejected. (cf. Southall, 1983 : Chapter 1).

### **3.1. Economic Growth in the Transkei.**

The earliest Gross Domestic Product estimates for Transkei date from 1954 and Table 1 contains a summary of growth performance over the three decades to 1984.

Table 1 : G D P Growth and Structural Change, 1954 - 1984.\*

Year	Gross Domestic Product (R'000)	GDP as a % of SA GDP	% Contributed to Total G.D.P. By :						
			Agric	Manufac	Trade	Public Admin	Education & Health	Other	Non-Market
1954	33 705	1,1	42,3	6,2	11,2	6,0	11,1	23,2	52,2
1959	45 021	1,0	42,6	6,1	11,3	7,0	11,0	22,0	54,3
1964	52 743	0,8	37,0	5,1	12,6	10,6	11,8	22,9	47,5
1969	84 528	0,8	37,4	10,5	14,8	10,3	10,4	16,6	46,2
1974	163 583	0,7	39,0	9,0	11,1	11,1	13,8	16,0	43,0
1979	474 769	1,1	30,2	7,4	16,1	10,7	13,5	22,1	40,5
1984	1 283 071	1,3	18,3	7,9	16,1	13,7	20,2	23,8	25,9

\* At current factor costs.

Sources : Thomas, 1983 : Tables 3 & 4.

Abedian, 1986.

Substantial shifts in the structure of GDP occurred over the three decades covered by Table 1. Most significantly, the share of the non-marketed and agricultural sectors declined. Thus, in 1954 non marketed production contributed 52,2% to GDP compared to 25,9% in 1984, while the share of agriculture declined from 42,3% to 18,3% over the same period. Conversely, Education & Health and Public Administration more or less doubled their contributions, reflecting the increased saliency of state activity as the basis for 'independence' was laid. Finally, despite the impressive nominal GDP growth, Transkei's share of South African GDP increased only marginally from 1,1% to 1,3%, over the same period, indicating the limited effect of this growth on the spatial distribution of production.

Gross Domestic Product measures the total value added by producers inside Transkei's boundaries. However, a more relevant magnitude for determining Transkeian households' control of economic resources is that of Gross National Product, which includes estimated earnings of

oscillating migrants originating from Transkei households. The importance of the latter source of income is clearly revealed in Table 2.

Table 2 : Relative Total and Per Capita GDP, GNP Estimates, 1954 - 1984.\*

Year	G.O.P. (R'000)	G.N.P. (R'000)	GDP as % GNP	De Jure Population	GDP Per Capita (R)	GNP Per Capita (R)	SA GDP Per Cap (R)	Per Capita GDP as % of SA Per Capita GDP	GNP as % of SA Per Capita GDP
1954	38 705	58 156	66,6	1 630 339	23,7	35,7	257,8	9,2	13,8
1959	45 021	78 932	57,0	1 749 015	25,7	45,1	301,2	8,5	15,0
1964	52 743	99 437	53,0	1 969 552	26,8	50,5	379,5	7,1	13,3
1969	84 528	153 089	55,2	2 244 738	37,7	68,2	520,5	7,2	13,1
1974	163 583	279 220	58,6	2 562 717	63,8	109,0	956,9	6,7	11,4
1979	474 768	889 755	53,4	2 941 484	161,4	302,5	1 608,0	10,0	18,8
1984	1 283 071	2 661 371	48,2	3 340 476	384,1	796,7	3 138,2	12,2	25,4

\* At current factor cost

Source : See Appendix 1.

Between 1954 and 1984, Transkei's GDP grew at an annual average rate of 12,3% in current prices. This was slower than the growth rate in GNP of 13,6% per annum. As a result, the share of GDP in GNP declined from an estimated 66,6% in 1954 to 48,2% in 1984, revealing the increasing importance of migrant labour.

Despite an average annual rate of population growth of 2,5% over the period, per capita GDP increased at 9,6% per annum in current prices from R 23,7 in 1954 to R 384,1 in 1984. The comparative growth rate for per capita GNP was 10,8% per annum and in 1984 it totalled R796,7. Nevertheless, in 1984, per capita output in Transkei was only 12,2% of the South African average, again indicating the disproportion between the spatial distribution of population and production in South Africa.

Discussion of growth performance in nominal or current terms is distorted by the inclusion of the effects of price inflation. Using the 1975 Price Index as a deflator, certain of the magnitudes contained in Table 2 have been recalculated to yield the real growth rates contained in Table 3.

Table 3 : Real\* Total and Per Capita GDP and GNP Growth Rates, 1954 - 1984.

Year	G.D.P. (R'000)	G.N.P. (R'000)	Per Capita GDP GNP (R)		Average Growth Rate Over Period (% p.a.)**			
					GDP	GNP	Per Cap GDP	Per Cap GNP
1954	91 501	137 485	58	87	-	-	-	-
1959	93 794	164 444	54	94	0,5	3,6	-1,5	1,5
1964	101 040	190 490	51	97	1,5	3,0	-0,8	0,6
1969	139 485	252 624	62	113	6,7	5,8	3,9	3,1
1974	185 679	316 935	72	124	5,9	4,6	3,1	1,9
1979	305 710	572 927	104	195	10,5	12,6	7,5	9,5
1984	438 201	908 938	131	272	7,5	9,7	4,8	6,9

\* Deflated by the 1975 Consumer Price Index.

\*\* For five year period starting at previous year given.

Source : Table 2.

The average real annual growth rates between 1954 and 1984 were respectively 5,4% for GDP, 6,5% for GNP, 2,8% for per capita GDP, and 3,9% for GNP per capita. The growth performance was very uneven across time and real per capita GDP actually declined between 1954 and 1964. From the extension of self government to the Transkei in 1963, GDP growth rates increased, primarily due to expanded public sector activity, as the Separate Development policy in the reserves was deployed. This is especially noticable in the period around 'independence' in 1976 (1974 - 1979) when a peak annual average rate of real GDP growth of 10,5% was recorded - although this had declined to 7,5% over the five year period to 1984.



In sum, if taken in isolation, Transkei's development performance, as measured by the rate of national income growth, whether in total or per capita terms, has been fairly impressive. However, when compared with the overall performance of the South African economy, relative GDP per capita has changed hardly at all. Rather, the major cause of the increase in Transkeian households' share of South African national income has come from increased dependence on migrant income, the welfare benefits of which are less certain.

### **3.2. Disadvantages of National Income as a Development Indicator.**

Despite its advantages, a number of limitations of national income as a development indicator have been identified :

i) **Accuracy of measurement** is a key requirement of any indicator. In the Third World, and in Transkei, a large part of production is consumed by households without ever being sold on the market. Not only must the quantity of such output be estimated, often from scanty data, but prices and production costs need to be imputed. Although considerable progress has been made in national accounts estimation techniques and data collection in Transkei over the last few years, estimates are being constantly revised as the data base is expanded. (cf Abedian, 1986).<sup>1</sup>

ii) The high levels of **aggregation** used in compiling national accounts means that such data are of little use in evaluating the impact of many of the micro-level projects that characterise much

of the development enterprise.

iii) Even if all countries were to produce estimates of national income according to the same procedures, problems of **inter-country comparison** emerge when estimates prepared at local prices and in the local currency are converted to a common denominator such as the \$US.<sup>2</sup>

iv) Data based on market prices can result in considerable **welfare inaccuracies** due to the presence of externalities. For example, a coal fired power station may release harmful amounts of effluent into the air. The health of people in the surrounding area may deteriorate. Not only will National Accounts data not include these costs, but if they result in the increased usage of medical services, national income will actually rise!

These limitations have led to the rejection of national income as an unambiguous development indicator by some, and its qualification by others. Accordingly, other measures of development performance are considered in the next sections.

#### **4. MEASURES OF INCOME AND WEALTH DISTRIBUTION.**

A major drawback of national income as a measure of development performance, even in its per capita form, is the neglect of issues of distribution. Only about one quarter of inter-country variation in income distribution performance can be explained by the level of per capita income. Fields (1981 : 70). Furthermore, estimates prepared by



the World Bank in the mid-1970's indicated that in countries with per capita incomes of around \$100, the income elasticity of growth for the poorest 20% of the population was only 0,18 - cold comfort for the proponents of the 'trickle down' approach to development<sup>3</sup>. Accordingly, in this section, attention is paid to distributional indices such as the Gini Index and the Lorenz Curve.

#### 4.1. Income Distribution.

Measures of inequality can be divided between those that show actual income/resource shares of different groups, as in Table 4, and indices of concentration, such as the Gini Index.

The data contained in Table 4 indicate that the median rural household income of R1 000 per annum was lower than that for urban households (approximately R4 000). However, it is difficult to determine which set of incomes is more equally distributed by examination. This problem can be solved by using the Gini Index, which summarises the different degrees of income concentration.

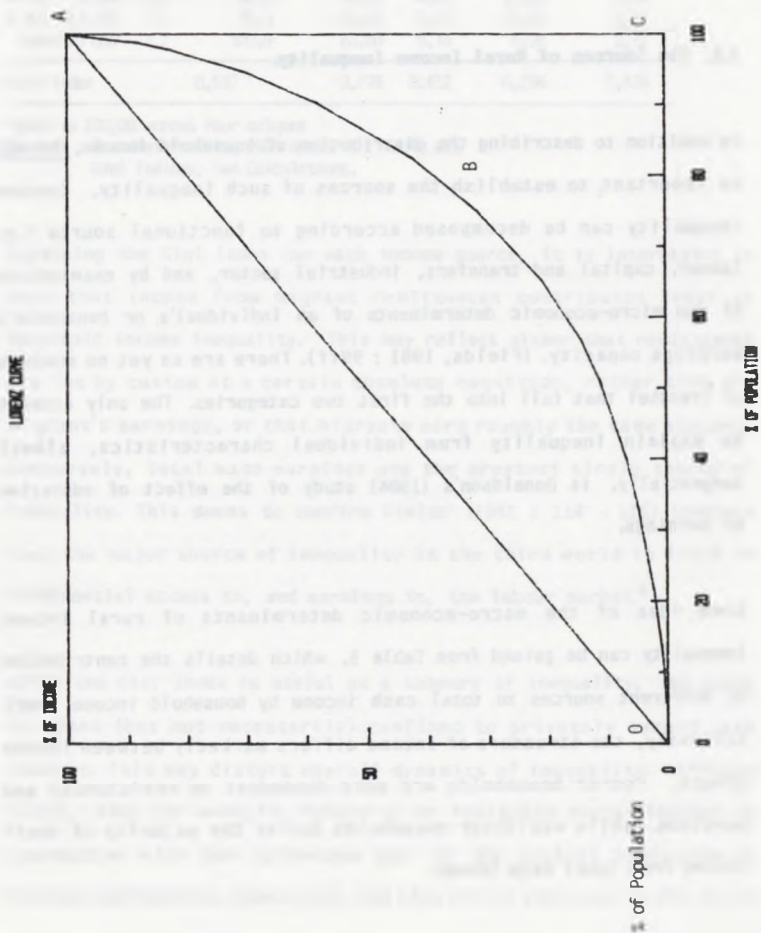
Table 4 : Income Distribution in Transkei, 1982.

Household Income (R. per annum).	URBAN		RURAL		TOTAL	
	%H	Cumulative %Households	%H	Cumulative %Households	%	Cumulative %Households
1 - 200	2,69	2,69	6,75	6,75	5,68	5,68
201 - 400	1,95	4,64	10,11	16,86	7,95	13,63
401 - 600	1,47	6,11	10,15	27,01	7,85	21,48
601 - 800	3,67	9,78	14,53	41,54	11,64	33,12
801 - 1 000	2,69	12,47	8,57	50,11	7,01	40,13
1 001 - 1 500	5,90	17,97	13,16	63,27	11,13	51,26
1 501 - 2 000	2,93	20,90	6,67	69,94	5,68	56,94
2 001 - 3 000	12,47	33,37	6,93	76,87	8,40	65,34
3 001 - 4 000	19,09	52,46	6,45	83,32	9,79	75,13
4 001 - 5 000	12,01	64,56	5,69	89,01	7,40	82,53
5 001 - 7 500	14,79	79,35	5,30	94,31	7,82	90,35
7 501 - 10 000	8,68	88,03	2,69	97,00	4,28	94,63
10 001 - 15 000	6,11	94,14	2,12	99,12	3,18	97,81
15 001 - 20 000	2,44	96,58	0,44	99,56	0,97	98,78
20 000+	3,42	100,00	0,44	100,00	1,22	100,00
Gini Index	0,456		0,537		0,580	

Sources : Transkei Profile : 1985 Number 1, Table 5.1.  
Gini Indices, Own Calculation.

The calculation of the Gini Index can be illustrated with the aid of a Lorenz curve, another distributional indicator - portrayed in Figure 1 - which consists of a mapping of the percentage of total income earned by households in a certain income group, against the percentage of households falling into it. Absolute relative equality exists if the percentage of income earned by an income group exactly equals the percentage of households falling into it. (Line OA). Conversely, inequality will be greatest if the distribution traces the 'absolute inequality' line OCA. The divergence of the actual distribution of income, mapped by the Lorenz Curve OBA, from the absolute equality line OA, indicates the degree of inequality. The Gini Index is merely an approximation of the ratio of area of OBA to the area of the triangle OAC. The greater the inequality in income distribution, the

FIGURE 1



closer the Lorenz curve will come to line OCA, and the value of the Gini Index will tend towards one. Conversely, more equally distributed incomes will be reflected in a Gini index that tends towards zero. The data in Table 4, and the Gini indices and Lorenz Curves, indicate that household cash incomes are very unequally distributed with rural incomes more concentrated than urban incomes.

#### 4.2. The Sources of Rural Income Inequality.

In addition to describing the distribution of household income, it may be important to establish the sources of such inequality. Income inequality can be decomposed according to functional source i.e. labour, capital and transfers, industrial sector, and by examination of the micro-economic determinants of an individual's or household's earnings capacity. (Fields, 1981 : 99ff). There are as yet no studies of Transkei that fall into the first two categories. The only attempt to explain inequality from individual characteristics, albeit tangentially, is Donaldson's (1984) study of the effect of education on earnings.

Some idea of the macro-economic determinants of rural income inequality can be gained from Table 5, which details the contribution of different sources to total cash income by household income level. Saliently, the structure of income differs markedly between income groups. Poorer households are more dependent on remittances and pensions, while wealthier households derive the majority of their income from local wage labour.

Table 5 : Sources of Rural Household Cash Income in Transkei, 1982

Annual Income (R)	Households %	Cumulative %	Contribution To Household Cash Income*			
			Wages	Pensions	Remittances	Production
Below 500	23,9	23,9	10,65	19,40	67,05	2,90
501 - 1 000	26,4	50,3	12,10	14,30	71,10	2,50
1 001 - 1 500	13,2	63,5	15,36	17,11	65,75	1,78
1 501 - 2 000	6,7	70,2	26,52	21,40	48,08	4,00
2 001 - 3 000	6,9	77,1	37,67	13,89	46,17	2,27
3 001 - 4 000	6,5	83,6	74,40	4,24	19,86	1,50
4 001 - 5 000	5,4	89,0	80,61	4,22	13,22	1,95
5 001 -10 000	7,3	96,3	69,90	4,43	22,95	2,72
Above 10 000	3,7	100,0	83,05	8,16	6,08	2,71
Gini Index	0,537	0,776	0,412	0,294	0,439	

\*Adds to 100,00 across four columns

Sources : Transkei Profile, 1985 Number 1 : Table 6.1

Gini Indices, Own Calculations.

Examining the Gini Index for each income source, it is interesting to note that income from migrant remittances contributes least to household income inequality. This may reflect either that remittances are set by custom at a certain **absolute** magnitude, rather than the migrant's earnings, or that migrants earn roughly the same amounts. Conversely, local wage earnings are the greatest single source of inequality. This seems to confirm Fields' (1981 : 114 - 116) findings that the major source of inequality in the third world is found in differential access to, and earnings in, the labour market.<sup>4</sup>

While the Gini Index is useful as a summary of inequality, its usage is often (but not necessarily) confined to privately earned cash incomes. This may distort overall dynamics of inequality. Harrison (1979 : 146) for example, refers to an 'invisible social income' in connection with the 'grotesque gap' in the spatial provision of health, sanitation, education, and electrical services in the third



world. Furthermore, in areas such as Transkei where a considerable part of household income is derived from production that does not pass through the market, difficult adjustments have to be made. Nevertheless, although there are a number of problems of accuracy and interpretation, the Gini Index is a useful additional indicator of development performance. (Loehr and Powelson 1981 : 102-3).

#### **4.3. The Distribution of Wealth - Land and Cattle.**

McGrath (1983) noted the substantial inter-racial differences in the distribution of income in South Africa reflected unequal ownership of wealth. Although there are no explicit studies of the distribution of wealth in Transkei, some idea of rural inequality can be gained from the distribution of the key resources of land and livestock revealed in Tables 6 and 7.

Detailed data on land ownership are difficult to come by as 87% of the land area of Transkei is subject to tribal land tenure. Theoretically this entitles all households to the allocation of arable land allotments. (Southey, 1981). However, the results of a number of recent studies, summarised in Table 6, indicate that the theory and practice of land allocation diverge and that about one third of rural households actually have no arable land.

Table 6 : Distribution of Arable Land (% Households).

Size (ha)	Gugweri	Stheleza	Zintwala	Engowe	Qumbu	Transkei
None	38,3	74,0	37,5	25,4	16,5	22,0
1	14,8	1,4	0,0	9,4	14,8	37,7
1 - 3,9	40,3	17,8	59,4	36,3	67,0	37,4
4+	6,7	6,8	3,1	29,0	1,7	2,9

Sources : Bembridge, 1984 : 305-308

May, 1984 : Table 3.1

DBSA, 1986 : Table 6.2.

Furthermore, even those that do possess land, often have less than the 4 ha calculated by Bembridge (1984) as the minimum required to provide household subsistence requirements.

Given the close inter-relationship between the migrant labour and household subsistence systems, the ownership of livestock is not only an important indication of a household's ability to engage in farming activities, but a vital source of security in times of adversity in the labour market. (Spiegel, 1980). Yet, a variety of micro surveys point both to the small average stock holdings and to their very unequal distribution.(cf Muller, 1984 : Tables 5 & 6). This is clearly revealed in Table 7 which details the distribution of livestock for 1 616 households in 18 villages surveyed in 1985. (DBSA, 1986a).

Practically half of the rural population own none of the major livestock types. Conversely, the top 1% of households in each case own 13,1% of the cattle, 32,2% of the sheep, 14,3% of the goats, 10,3% of the pigs and 6,4% of the chickens. As the high Gini indices of stock ownership indicate, rural wealth resources are even more unequally distributed than income.<sup>5</sup>



Table 7 : The Household Distribution of Livestock Holdings, 1985. (%Stock).

% Households*	% Cattle	% Sheep	% Goats	% Pigs	% Chickens
Bottom 1 - 10	0,0	0,0	0,0	0,0	0,0
11 - 20	0,0	0,0	0,0	0,0	0,3
21 - 30	0,0	0,0	0,0	0,0	3,3
31 - 40	0,0	0,0	0,0	0,0	4,7
41 - 50	0,0	0,0	0,0	3,6	6,5
51 - 60	0,9	0,0	0,0	9,7	9,7
61 - 70	6,8	0,0	2,4	9,7	11,2
71 - 80	13,7	0,0	12,4	14,1	14,0
81 - 90	23,0	14,6	19,6	20,3	19,1
91 - 100	55,5	85,4	65,7	42,5	32,2
Top 5	37,7	68,1	40,4	29,0	19,9
1	13,1	32,2	14,3	10,3	6,4
Gini Index	0,75	0,87	0,78	0,63	0,49

\* The ranking of households may differ for different stock types.

Source : DBSA, 1986a.

## 5. POVERTY.

The close inter-relationship between absolute and relative deprivation is evident in the complexity of the notion of poverty. Hattrass (1979: 2) points out that poverty is 'awkward' to define as it 'is used in both an absolute and relative sense'. As an absolute measure, poverty refers to a lack of resources or, in current parlance, the failure to fulfill basic human needs. Relatively, poverty simply means that some are less well off than others and thus feel 'relatively deprived'. Although this section is largely be concerned with poverty in its absolute sense, it will be seen that issues of poverty and inequality are closely inter-related. In this section poverty is measured with reference to the Household Subsistence Level, the Physical Quality of Life Index (PQLI) and basic needs fulfillment.

### 5.1. Household Subsistence Levels and the Poverty Datum Line.

Poverty Datum Lines (PDL's), first used in South Africa in the mid-1940's, consist of the income equivalent of a bundle of goods that are considered necessary to provide for the theoretically derived minimum requirements for a household to survive in the short-term. While it is clear that 'minimum requirements' depend on the prevailing socio-economic arrangements, and so will differ between societies and over time, one way of establishing whether development has occurred would be by examining the changing number and proportion of households that fall below the PDL.

Two estimates of the PDL, or household subsistence level (HSL), calculated respectively by Cragg (1984) and the Institute for Planning Research at UPE for Transkei in March 1984 are contained in Table 8, and indicate a minimum annual cash income requirement of between R3 219,96 and R 3 557,64 for urban households and R1 786,44 and R2 946,12 for rural households.

Table 8 : Estimated Monthly and Annual Household Subsistence Levels c.March 1984.

Type of Expenditure (R)	URBAN		RURAL	
	Cragg	IPR	Cragg	IPR
Food	160,00	158,48	177,96	106,46
Clothing	45,95	45,37	38,16	38,17
Fuel, Cleaning	31,42	40,08	20,66	13,82
Primary HSL	238,22	243,93	236,78	158,45
Rent	30,00	17,93	-	-
Taxation	-	-	5,00	3,45
Transport	15,50	6,47	6,50	3,52
Education	7,75	-	4,63	-
Medical	5,00	-	4,00	-
LESS Home Production	-	-	-11,40	-16,55
Monthly HSL	296,47	268,33	245,51	148,87
Annual HSL	3 557,64	3 219,96	2 946,12	1 786,44

Source : Transkei Profile, 1985 Number 1 : Table 5.2.

The differing estimates reveal that, despite its seemingly objective methodology, the calculation of the 'minimum requirements' for survival is somewhat subjective.<sup>6</sup> Nevertheless, if inflation between September 1982, when the Income and Expenditure study, on which the income figures contained in Table 4, was conducted, and March 1984, is taken into account, more than 70% of rural and about one third of urban households in Transkei fell below Cragg's estimated HSL.

However, while the PDL is a useful measure of absolute deprivation, Budlender's (1985 : 21) concluding comments to her critique of such concepts, should be borne in mind :

"Poverty levels cannot be isolated from the general standards of society. They must be related to the income levels and standards prevalent in that society. People are not happy earning just enough to keep body and soul together if they see people around them living in the lap of luxury. They feel that if they contribute to creating the wealth of a society they have a right to a share of that wealth."

## **5.2. The Physical Quality of Life Index (PQLI).**

Measures such as the HSL and PDL attempt to quantify incomes required to satisfy Basic Needs. However, even if incomes are sufficient to provide for basic needs fulfillment, there is no guarantee that income will be so utilised. This has led to attempts to measure system outputs rather than inputs. One such attempt in the Physical Quality of Life, index (PQLI), which has gained increasing acceptance since the publication of a detailed methodological exposition. (Morris, 1977).

The PQLI combines equally indices of infant mortality, life expectancy at age one, and the adult literacy rate, and according to Weinstein (1981 : 115) :

"They sum up the the effects of nutrition, public health, income and general environment. These indicators are also sensitive to different dimensions of the social process : while the life expectancy figure reflects general environmental characteristics, the infant mortality rates reflect the position of women in the household and the society at large. In so much as literacy reflect the extent to which groups share or will be able to share in the benefits of economic growth, they are a measure of well-being. At the same time, literacy is a skill..."

As with many other indicators, the relationship between per capita income and the PQLI is less than perfect, with at most one half of the life quality results being explained by it, indicating that economic growth is a necessary, but not sufficient, precondition for the elimination of poverty. (Morris, 1977 : 53). In outlining the calculation of the PQLI for the Transkei, attention will be paid to the way in which the problems of scaling and weighting have been solved.

#### (i) The Literacy Index.

The calculation of the Literacy Index seems very simple as it refers to the percentage of the population over the age of fifteen that are literate. Yet, a crucial issue concerns the definition of 'literate', as data from the Transkei illuminate. In the 1980 Census, literacy was defined simply as the ability to read or to write. According to this

definition, 62% of the de facto adult population were literate. (Transkei Profile, 1985 Number 1 : Table 8.7). However, if schooling is not taken past a certain stage, regarded as 6 years in the Transkei, then the benefits are not retained, and the adult population falling below this threshold may be regarded as 'functionally' illiterate. (Donaldson, 1984). If this latter definition is taken as the literacy measure, then the estimated adult literacy rate would fall to about one third. (Transkei Profile, 1985 Number 1 : Table 11). For purposes of the PQLI calculation, the higher score of 62% will be used, as this accords more closely with accepted practice.

(ii) The Infant Mortality Index.

The calculation of the Infant Mortality Index, immediately brings scaling problems to the fore. Theoretically, the infant mortality rate (IMR), defined as the number of infant deaths per thousand live births, can take on values ranging from 0 to 1000. However, Morris (ibid) points out that since 1950 the highest IMR obtained was 229 in Gabon and the lowest 8 in Sweden.<sup>7</sup> To use a scale from 0 to 1 000 would thus mean most would be wasted. He accordingly defines the IMR index with the end points of 229 and 7. The formula for calculating the IMR score then is  $100[(229 - \text{IMR})/222]$ .

Unfortunately, an adequate vital statistics collection system is absent in Transkei, necessitating the estimation of the Infant Mortality Rate (IMR). Table 9 contains data on the infant and child mortality (under 5 years of age) rates for 13 of Transkei's 26 districts derived from a survey of 21 209 women conducted in 1979. The



infant mortality rate varied from 75 per thousand in Engcobo to 187 in Tabankulu and averaged 130 for Transkei as a whole.<sup>8</sup>

Table 9 : Infant and Child Mortality Rates in Transkei, 1979.

District	IHR	CMR	District	IHR	CMR
Engcobo	75	98	Maluti	129	179
Nqamakwe	91	152	Kentane	129	229
Bizana	112	185	Umtimvubu	140	185
Lusikisiki	115	191	Idutywa	142	196
Xhosa	119	150	Tsoilo	150	218
Umtata	120	190	Cofimvaba	153	212
Matatiele	127	183	Tabankulu	187	261
Average	IHR 130		CMR 190		

Source : Irwig, 1981 : Table 1.

Transkei's infant mortality rate of 130 per thousand yields an index score of  $100(229 - 130/222) = 44,6$ .

### (iii) The Life Expectancy Index.

The derivation of the Life Expectancy Index is the most complicated of the three calculations. Technically, life expectancy at age 1 is defined as :

$$e' = \frac{e^0 - 1 + q^0(1 - k^0)}{1 - q^0}$$

Where :  $e^0$  = life expectancy at birth in years;  $e'$  = life expectancy at age 1 in years;  $k^0$  = average survival period of those dying in first year in decimal fractions of a year - assumed to be 0,2 years;

and  $q^0$  = the infant mortality rate expressed as a decimal fraction. (Eckert, 1986 : Appendix III).

Specific life expectancy data for Transkei are unavailable, so an average (58,69) of Sadie's (1973) estimations for the South African african male (54,94) and female (62,43) populations for 1980-85 was taken. Substituting into the above formula, yields a life expectancy at age 1 in Transkei of 66,19 years.<sup>9</sup>

As with the IMR index, it is necessary to establish limits to the life expectancy index. Morris uses a lower level of 38 years and an upper of 77 years. The index score is accordingly  $(e'-38)/0,39$  i.e.  $(66,19 - 38)/0,39$  or 72.

(iv) Calculation of the PQLI.

Having derived three scores out of 100, Morris avoids the problem of weighting by simply averaging the three scores, thus in, for example, Transkei,  $(62 + 45 + 72)/3 = 60$ .<sup>10</sup> On this basis, the relative deprivation suffered by Transkei is readily apparent when the index obtained is compared with that for South African whites of 89,1 (males) and 95,4 (females) and the South African average of 72. (Eckert, 1986 : Tables 5 & 6).

### 5.3 Basic Needs

The previous sections have been concerned with single indices that capture the overall process of economic development. However, as noted



in the introduction to this paper, there is an increasing concern with the fulfillment of basic needs by the poorest groups in society at a far more disaggregated level. Although there is some disagreement over the needs to be included in the basic needs basket, any list must include certain minimum requirements of a family for private consumption : adequate food, shelter and clothing... (and) certain household equipment and furniture as well as essential services provided by and for the community at large, such as safe drinking water, sanitation, public transport and health and education facilities. To this is added worthwhile employment which is both a basic need itself and a means to satisfying others. (Ghai, 1977 : 9).

A brief description of basic needs fulfillment can be given with the aid of Table 10 which contains the problems of 1 621 households surveyed in 18 villages in Transkei in 1985.

Table 10 : Problems with Basic Needs Fulfillment.

Basic Need	% Households with Problems	Range (% Households in Villages)
Water	80,4	28,8 - 98,7
Education	67,1	1,3 - 98,3
Health	65,3	1,6 - 97,3
Employment	62,8	19,0 - 98,8
Transport	60,8	4,1 - 98,2
Agriculture	59,5	17,2 - 96,5
Fuel	48,5	2,0 - 93,8
Housing	29,4	0,0 - 84,4
Conservation	22,9	0,0 - 79,6
Sanitation	21,5	0,0 - 73,1

Source : DBSA, 1986 : Table 1.2.

Water problems were the most frequently mentioned, affecting more than 80% of the households interviewed. Aspects identified included: its

inadequacy (20,1%), distance from the household (14,4%) and its dirty and unprotected nature (22,2%).<sup>11</sup> (DBSA, 1986 : Table 11.13).

Reflecting the changing skills requirements of the labour market for franskeian labour, educational problems were the next most important, identified by 67,1% of the sample. The largest single specific problem (38%) was the absence of a secondary school in the area. A further 10,2% indicated that the costs of schooling were difficult to cover. (DBSA, 1986 : Table 11.1).

The single most important problem (78%) identified by the 65,3% of households that identified health issues, was the accessibility of the nearest clinic. (DBSA, 1986 : Table 11.7). Interestingly only 7,7% conceded that nutrition and/or food supplies were problematic. This is surprising as 51,2% of households indicated that food shortages were experienced at some time during the year. (DBSA, 1986 : Table 7.1.).

Employment problems were identified by 62,8% of the households. The most important specific issues were the lack of employment opportunities (70,5%) in general, for educated children (8,0%), and poor wages (21,6%). (DBSA, 1986 : Table 11.3).

As with the other socially provided basic needs, Transport problems were identified by a majority of the households. Two issues were dominant; viz. poor roads (63,7%) and the inadequate public transport infrastructure. (36,3%). (DBSA, 1986 : Table 11.17). The major issue (84,2%) identified by the households with fuel problems was the

scarcity of wood or the distance to the nearest supply. Like water provision, the burden of this problem falls largely on the female members of the household, responsible for its collection.

Agricultural, housing and conservation issues were dominated by shortages of land and indigenous building materials, and the poor quality and delapidation of state provided infrastructure such as dams and fencing.

## 6. CONCLUSION.

The dimensions of the Transkei's development performance in terms of a number of commonly used development indices have formed the focus of this paper. National income, which measures the growth in the provision of goods and services in the economy, was the first indicator considered. Whether measured in per capita or total income terms, Transkei has enjoyed a very high rate of economic growth since 1954. However, there are certain problems, derived both from the international literature and the particularities of Transkei's development, that require the use of national income data to be qualified as a development indicator. Most notably, they are poor indications of the solution of problems of inequality and poverty. This necessitates the search for alternative indices such as the Gini index, the PDL, the PQLI, and the degree basic needs fulfillment.

Utilisation of these supplementary indicators, points to the fact that, despite the rapid rates of growth in income accruing to Transkeian households, such income is very unequally distributed and

poverty is severe. Most importantly, while examination of Transkei's share in South African GDP provides some evidence of spatial redistribution of income, this has not filtered down very far, and other indices such as the PQLI indicate substantial relative deprivation.<sup>12</sup>

Finally the critical degree of poverty and inequality in the Transkei, outlined in this paper, point to the failure of a variety of strategies of development based on enforced racial separation - ranging from patient agricultural extension, through Betterment to massively subsidised industrial decentralisation - to provide the benefits of a century of economic growth, to a population that has committed generations of workers to the development of the mining industry. In the end, the solution to the problems of poverty in this region of the South African economy, will depend on the full re-integration of its population into the central political and economic system.

#### NOTES

1) Data problems with crop production are nicely illustrated in the Hawkins Report (Hawkins Associates, 1980 : 98). They note that these data derive from estimates made by agricultural extension officers and 'vary according to the officer's experiences, method of estimation and attitude to the importance of the figures, whilst his arithmetical ability can have startling consequences.' Examining records in the Department of Agriculture and Forestry between 1974 and 1979 they did not find complete figures for each year for a single district. To add to these problems, recent years have witnessed a change in the land unit for estimation from morgen to hectare and the size of a bag from 200lb to 90kg to 70kg.

2) If India's per capita income is compared with that of the USA, both valued at local prices, the ratio is 50 : 1. However, if account is

taken of the differences of the purchasing power of a rupee in India and a dollar in the USA, then the ratio falls to 14 : 1. (Apris, 1977 : Table 1).

3) The definition of the income elasticity of growth is the percentage change in income of an income group divided by the percentage change in national income.

4) McGrath (1983 : 1) indicates the relevance of this finding in South Africa, when he notes :

"In 1976 the ratio of white to african per capita income was 12,5 to 1. Wage discrimination, occupational discrimination, and discrimination in educational opportunities can explain half this difference. The other half, however, is the consequence of **unequal access to modern sector employment opportunities.**" (My emphasis).

5) May (1984 : 114ff) has derived a 'wealth factor score' which includes land and stock holdings, agricultural implements, maize mills, sewing machines and radio and bicycle ownership. The Gini Index of distribution of this wealth score for Umzimkulu in 1982 was 0,537. (Calculated from Table 4.24).

6) Budlender (1985) has subjected this methodology, and its application to South Africa, to a careful examination. She criticises it primarily for the use of averages, post hoc reasoning, and the assumption of perfect rationality, concluding that such estimates 'condemn those who make the wrong choices, whether through reasons of ignorance or taste, or through lack of time or transport, to inadequate energy and health'. (1985 : 8).

7) Although it is estimated that the military destabilisation of Angola and Mozambique have resulted in a IMR of about 375. (Natal Mercury, 22/2/87).

8) These rates also indicate the racial and spatial biases of South African development as the white infant mortality rate in the major urban areas of South Africa ranged from 6,5 in Benoni to 18,8 in Brakpan and averaged 13,2 in 1980 while the comparative rate for metropolitan africans was 85,0. (Vergnani, 1983 : Appendices 1 & 2).

$$9) \text{ i.e. } \frac{58,69 - 1 + 0,13(1 - 0,2)}{1 - 0,13}$$



10) Morris (1977 : 47) justifies this 'somewhat arbitrary judgement' as the 'results measured by the PQLI are the summation of complex social inter-relationships for which there is no theoretical explanation that imposes (or even suggests) any other set of weights'. He also found that the results were not unduly affected by changing the weights of any of the indicators and that the stability of the PQLI is greater than that of its individual components.

11) All percentages given of specific problems are a percentage of those that identified the problem and not the sample as a whole. In this case they are of the 80,4% that identified water problems.

12) With the exception of national accounts, time series data on development indicators are largely unavailable for Transkei. However, it is likely that Transkei has followed the path of income growth identified by Simkins (1984) for the bantustans as a whole. He found that while on the one hand there had been an overall increase in incomes between 1960 and 1980, resulting in a decline in the percentage of households falling below the Minimum Living Level from 99% to 81%, the percentage receiving no income increased from 5% to 13%. However, due to population growth, the incomeless population increased fivefold from 0,25 to 1,25 million over the period. (1984 : Table 8).

# APPENDIX 1 : DATA SOURCES FOR TABLE 2.

Estimates of Transkei's Gross Domestic Product for 1954 to 1979 were taken from Thomas (1983 : Table 3). The 1984 figure is from Abedian (1986). GNP estimates were taken from Abedian (1984) for the period from 1970 - 1979 and Abedian (1986) for 1984. The earlier estimates are based on my own calculations of total migrant earnings. Here I interpolated the number of oscillating migrants by linear extrapolation from the estimates for 1951, 1960 and 1970 made in Muller (1985 : Table 7). I then multiplied this number by the average african mining wage for the required years to arrive at total migrant earnings. These were simply added to the GDP estimates to arrive at GNP. Table A.1. contains details of the data used.

Table A.1. Migrant Earnings Selected Years 1951 - 1969.

Year	Oscillating Migrants	Average Annual African Mine Wage (R)	Total Migrant Earnings (R)
1951	200 265	78,59	15 738 031
1954	216 798	89,72	19 450 807
1959	247 443	137,05	33 911 091
1960	254 073	153,18	38 918 737
1964	286 441	163,01	46 694 063
1969	332 760	206,04	68 560 834
1970	342 886	216,08	74 089 821

\*Wage Data 1951 and 1954 non-white average.

Sources : Muller, 1985 : Table 7.

South African Statistics, 1964 : Tables H-23 and H-46

South African Statistics, 1970 : Tables H-47 and H-79

South African Statistics, 1976 : Table 7.7.

South African Statistics, 1982 : Table 7.8.

It is felt that while intersectoral differences, changing mine contract periods, and earnings by non-Transkeians have not been taken into account, the results are reasonable approximations :



i) The method of migrant estimation is made for a single day and while it underestimates total involvement in the migrant labour system, it probably gives a fairly accurate estimate of the actual number away each day in a year. This means that earnings data need not be corrected for contract lengths and that annual average wages can be used.

ii) The use of annual average mining wages for africans is viewed as a good approximation of average migrant earnings, both because the vast majority of migrants are employed in the sector, at least in the period concerned, and mining wages fall somewhere between manufacturing wages and those for domestic service and agricultural labour, the next largest employers of migrant labour. Research in Transkei also indicates that the average migrant and mining migrant's wages were almost identical in 1982. (Wakelin, 1983).

iii) The earnings of non-Transkeians are relatively insignificant and this exclusion from national amounts estimations reinforces the fiction that Transkei represents a separate country.

Population estimates for the various labour reserve areas of South Africa are complicated by widespread 'oscillating' and 'illegal' permanent migration into the major urban areas of employment. Estimates of these different population flows for the period 1904 - 1980 for Transkei have been made elsewhere. (Muller, 1985 : Table 7).

In 1985 a sample census was held in Transkei which explicitly asked how many household members were absent. Preliminary results and calculations indicate that the census was well conducted and coverage was very good. According to these results there were 677 565 absent

household members resident in Transkei. However, no additional questions such as when migration occurred or when last the migrant visited were asked to gain insight into how many of this number were 'permanent' - if illegal - migrants. The figure is accordingly a considerable over-estimate of 'oscillating' migrants. In order to remedy this situation, the results of a large scale rural village study also conducted in 1985, which asked questions about the frequency and duration of visits, were used. This indicated that 28,1% of absentees visited the rural homes from which they were 'absent' less than annually. Applying this percentage to the census results yields 487 169 oscillating migrants and 190 396 permanent absentees, which accords with other data on the extent of migration.

Taking the estimations previous to 1970 from Muller (1985) and the 1985 estimations allows us to estimate population trends through interpolation for the required years as in Table A.2.

Table A2 : Population and Migration Estimates For Transkei, 1951-1985.

Year	De Facto Population	Oscillating Migrants	Resident Population
1951*	1 363 217	200 265	1 563 482
1954	1 413 540	216 799	1 630 339
1959	1 501 572	247 443	1 749 015
1960*	1 519 826	254 073	1 773 899
1964	1 683 111	286 441	1 969 552
1969	1 911 978	332 760	2 244 738
1970*	1 961 341	342 886	2 304 227
1974	2 201 244	361 473	2 562 717
1979	2 527 497	413 987	2 941 484
1984	2 866 346	474 130	3 340 476
1985*	2 932 397	487 169	3 419 566

\*Census Year

Sources : 1951 - 1970 from Muller, 1985 : Table 7.

1970 - 1985 from Preliminary Unpublished 1985 Transkei Census Results.

South African population figures are interpolations based on the 1951, 1960 and 1970 censuses. Due to the exclusion of the 'independent' bantustans after 1970 from South African census figures, use was made of Sadie's revised population projections for 1980 and 1985. (Muller, 1982). The population estimates and GDP figures used are contained in Table A.3.

Table A.3 : South African Population and Per Capita GDP Estimates 1951 - 1984.

Year	Population (000)	GDP* (Rm)	Per Capita GDP* (R)
1951**	12 671	2 772	218,77
1954	14 056	3 624	257,83
1959	15 593	4 694	301,16
1960**	16 003	4 983	310,80
1964	18 107	6 872	379,52
1969	21 131	10 999	520,51
1970**	21 794	12 037	552,31
1974	24 157	23 116	956,91
1979	27 475	44 179	1 607,97
1980***	28 191	58 514	2 075,63
1984	31 024	97 360	3 138,19
1990***	35 817	-	-

\*Current Factor Incomes.

\*\* Census Result.

\*\*\* Projection.

Sources : South African Statistics, 1982 : Tables 1.7 and 21.4.

Muller, 1982 : Tables 13 and 16.

Statistical News Release P.21.1. 12 March, 1986.

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